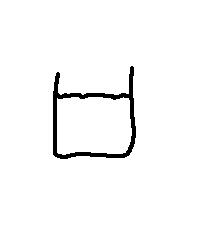
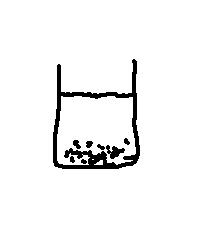
**2.6 – Solubility**

Solubility – in simpler terms, refers to the ability or the amount of a substance that will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. For example,

Solvent – a liquid that is capable of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **(the DISSOLVER)**

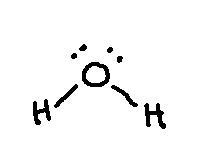
Solute – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into another substance **(the DISSOLVEE)**

Now, let’s rewrite the definition of solubility. It is the ability or measure of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that dissolves \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

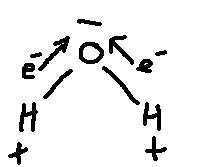
* **Saturation**: A solution becomes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when the maximum amount of solute is dissolved into solution. If a solution can still dissolve more solute, it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* A solution is then a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mixture; that is, it appears uniform in composition. It remains this way until it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* If a solution is saturated, any more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ added will not dissolve. This will result in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mixture; that is, more than one substance is clearly visible.

Homogeneous Mixture Heterogeneous Mixture

**Water as a solvent**

* Water is referred to as the “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”. You may have also commonly heard of the term to “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”. Water has the amazing ability to dissolve many things. Why? Let’s look at the shape of a water molecule:

Water is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* **Polarity**: Oxygen is very \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This makes water a very polar molecule.
* Water can dissolve any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and other polar compounds.
* What about OIL?

**A few solubilities for examples…**

* Sucrose: 181.9g per 100g of water at 0 degrees
* Hydrogen chloride: 81g per 100g of water at 0 degrees
* Rubidium perchlorate: 22g per 100g of water at 100 degrees

**Properties that affect solubility**

1. Temperature
2. Pressure
3. Molecular Size
4. Polarity

* How do you think each one affects solubility?